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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,579	01/31/2006	Takeshi Azami	Q92766	5131
23373 7590 03/30/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER				
MICALL, JOSEPH				
ART UNIT		PAPER NUMBER		
1793				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/566,579

Applicant(s)

AZAMI ET AL.

Examiner

Joseph V. Micali

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Status of Application

The amendment filed on February 13th, 2009 has been entered. Claims 1-5 and 10 are pending and presented for examination on the merit. Claims 6-9 have been withdrawn. The previous objection to the specification with regards to the length of the abstract has been withdrawn in light of applicant's amendment.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 3, 5, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,878,360 by Ohsaki et al.**

With respect to claims 1 and 5, Ohsaki teaches a carbon fibrous manufacturing apparatus. Specifically, Ohsaki teaches both a generation chamber which generates the nanocarbon or nanofibers as well as a recovery chamber for recovering the generated nanocarbon or nanofibers (abstract, figures 1-3, column 6, line 62 – column 7, line 32, and column 12, line 66 – column 13, line 10). A moistening unit, specifically a wet type spraying unit which sprays water or an organic liquid onto the carbon fibers, is located in the recovery chamber (column 13, lines 4-10).

With respect to claim 3, Ohsaki teaches a carrier pipe guiding the nanocarbon into the recovery chamber, both with regards to the initial recovery chamber (ejector chamber) and the final recovery chamber (final collection chamber) (**figures 1-3, column 10, lines 48-52, and column 12, lines 66-67**).

With respect to claim 10, Ohsaki teaches a recovery chamber with an inclined bottom face, specifically with the ejector chamber (**figures 1-3**)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,878,360 by Ohsaki et al, as applied to claim 1 above, and further in view of Japanese Patent No. 10-273308 by Achinami et al.**

With respect to claim 2, Ohsaki does not explicitly teach a graphite target, nor a light source which irradiates light onto a surface of the graphite target.

Achinami discloses a method for producing carbon nanotubes, wherein a graphite-containing carbon rod is positioned in a quartz tube arranged in an electric furnace and laser light is irradiated onto the carbon rod in an inert gas atmosphere to deposit carbon nanotubes on the inner wall face of the quartz tube (**claims 1-3 and drawing 1**).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Ohsaki including the addition of a graphite target to be irradiated with light from a light source, in view of the teaching of Achinami. The suggestion or motivation for doing so would have been to maintain better control over the final nanocarbon products' chief characteristics, such as diameter of fiber, by use of a graphite target methodology (**Achinami, paragraph 0006**).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,878,360 by Ohsaki et al in view of Japanese Patent No. 10-273308 by Achinami et al, as applied to claim 2 above, and further in view of US Patent No. 6,171,451 by Miley et al.

With respect to claim 4, Ohsaki, while teaching a moistening unit in the recovery chamber, does not teach a secondary moistening unit in the generation chamber. Achinama does not teach a moistening unit or spray unit in addition to the apparatus.

For the secondary moistening unit element, Miley describes a device for the production of nanocarbons, specifically fullerenes, including a soot extraction mechanism for removing and collecting the fullerenes. The apparatus comprises a means of carbon soot extraction for removal and collection of said complex carbon molecules by a "wash

down” method (**claim 3**). This “wash down” method is further limited to a system of spraying an appropriate liquid onto the internal surfaces of the gas containment vessels in order to remove accumulated soot (**claim 31**). Finally, the aforementioned moistening unit is located within the generation chamber.

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the process of Ohsaki and Achinami including the addition of a secondary moistening unit located in the generation chamber, in view of the teaching of Miley. The suggestion or motivation for doing so would have been to collect and move along the nanocarbon produced in the generation chamber (**Miley, column 10, lines 40-43**).

Response to Arguments

7. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment has forced the examiner to continue a prior art search. In view of the newly amended claim 1 with “a moistening unit which moistens generated nanocarbon is provided in said recover chamber”, examiner has made a new rejection supra which takes into account this limitation.

Conclusion

8. Claims 1-5 and 10 are rejected.
9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph V. Micali whose telephone number is (571) 270-5906. The examiner can normally be reached on Monday through Friday, 7:30am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry A. Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1793

/Joseph V Micali/
Examiner, Art Unit 1793

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793